

Springfield, Massachusetts, 19th.—Extensive pale auroral light in the north, with a few streamers.

Fort Myer, Virginia, 19th.—Aurora during night, lasting until daylight.

Mount Washington, New Hampshire, 20th.—Aurora from 7.10 to 9.35 p. m.

New Market, New Hampshire, 20th.—Brilliant aurora with beams of various colors.

Grafton, New Hampshire, 20th.—Aurora observed at 9.15 p. m.

Newport, Vermont, 20th.

Eastport, Maine, 20th.—Brilliant auroral arch from 8.00 p. m. to morning of 21st.

Gardiner, Maine, 20th.—At 7.20 p. m., low auroral arch with beams; at 9.00 p. m., arch disappeared; at 10.00 p. m., very brilliant beams of greenish light. The display continued throughout the night, and at 5.30 a. m. of 21st, a brilliant irregular arch appeared above a dark cloud.

Orono, Maine, 20th.

North Benton, Montana, 20th.—Aurora from 6.00 to 7.30 p. m.

Bismarck, Dakota, 21st.—Auroral light in the northern sky from 5.30 a. m. till daybreak.

Cedar Rapids, Iowa, 23d.

Fort Stevenson, Dakota, 27th.—Aurora in north from 9.30 until after 10.00 p. m.

Fort Brady, Michigan, 27th.—Aurora at 8.00 p. m.; obscured by fog at 9.00 p. m.

Buffalo, New York, 31st.—From 10.25 to 11.20 p. m., a faint orange-colored auroral light resembling the morning dawn.

ATMOSPHERIC ELECTRICITY INTERFERING WITH TELEGRAPHIC COMMUNICATION.

Fort Maginnis, Montana, 5th.—Atmospheric electricity rendered working of telegraph lines impracticable. The current was so strong that the office-wires were melted and the operator was severely stunned by contact with the instruments. A violent snow-storm prevailed at the time, during which all metal points in the vicinity of the wires, such as nails, screws, etc., were tipped with light.

THUNDER-STORMS.

Thunder-storms were reported in the various states, on the following dates:

Alabama.—Auburn, 22d; Mobile, 10th, 19th, 21st; Mount Vernon Barracks, 21st.

Arkansas.—Fort Smith, 19th.

Florida.—Cedar Keys, 22d; Fort Brooke, 10th, 15th, 22d; Jacksonville, 22; Pensacola, 10th, 21st, 22d.

Georgia.—Augusta, 21st; Savannah, 21st.

Illinois.—Cairo, 5th; Springfield, 4th.

Kansas.—Creswell, 19th; Independence, 19th, 20th; Leavenworth, 6th; Yates Centre, 19th.

Louisiana.—New Orleans, 5th, 10th, 15th, 21st; Point Pleasant, 19th; Port Eads, 15th, 21st.

Maine.—Bangor, 31st.

Massachusetts.—Menden, 31st; Fall River, 31st.

Missouri.—Pierce City, 19th, 20th; Protem, 19th.

North Carolina.—Cape Lookout, 21st; Fort Macon, 13th; Hatteras, 13; Portsmouth, 13th, 21st.

South Carolina.—Stateburg, 21st.

Tennessee.—Nashville, 20th.

Texas.—Coleman City, 21st; Denison, 19th; Fort McKavett, 19th; Galveston, 18th, 19th; Indianola, 20th, 24th; Palestine, 19th.

Washington Territory.—Fort Canby, 17th.

OPTICAL PHENOMENA.

SOLAR HALOS.

Solar halos have been observed in the various districts, on the following dates:

New England.—3d, 4th, 5th, 7th, 9th, 10th, 13th, 20th, 26th, 27th.

Middle Atlantic states.—4th, 6th, 14th, 17th, 18th, 20th.

South Atlantic states.—7th, 10th, 14th, 19th, 20th, 23d, 29th.

Florida peninsula.—7th, 16th, 21st, 24th, 26th.

Western Gulf states.—2d, 6th, 14th, 16th, 24th.

Ohio valley and Tennessee.—1st to 4th, 7th, 12th, 14th, 15th, 17th to 20th, 24th, 25th.

Extreme northwest.—2d, 5th, 6th, 12th, 20th.

Upper Mississippi valley.—1st, 2d, 3d, 7th, 10th, 12th to 16th, 18th, 24th, 25th, 31st.

Northern plateau.—1st, 18th, 19th, 20th, 22d.

Solar halos were also reported from the following stations, not included in the districts named above:

San Francisco, California, 2d, 10th, 16th, 20th, 23d, 26th, 27th, 29th, 30th; Oakwood, California, 27th; Poway, California, 28th; San Diego, California, 28th; Visalia, California, 1st, 3d, 17th; Fort Custer, Montana, 10th; Ruggles, Ohio, 7th; Lansing, Michigan, 8th; Riley, Illinois, 24th, 31st; Protem, Missouri, 4th, 12th, 13th, 24th, 30th; Topeka, Kansas, 11th; Creswell, Kansas, 8th, 30th; Fort Maginnis, Montana, 13th; Yates Centre, Kansas, 1st, 3d, 4th, 30th; Pretty Prairie, Kansas, 5th; Salt Lake City, Utah, 2d, 3d, 16th; Eagle Rock, Idaho, 20th; Fayette, Mississippi, 28th, 29th, 30th.

LUNAR HALOS.

Lunar halos have been observed in the various districts, on the following dates:

New England.—15th, 17th, 20th, 21st, 22d, 25th, 26th, 29th.

Middle Atlantic states.—2d, 8th, 15th, 17th to 20th, 22d, 23d, 25th, 26th, 27th.

South Atlantic states.—17th, 19th to 28th.

Florida peninsula.—24th, 25th.

Eastern Gulf states.—15th, 18th, 24th, 27th.

Western Gulf states.—17th, 18th, 22d, 23d, 24th, 26th, 27th, 31st.

Ohio valley and Tennessee.—14th, 16th, 17th, 19th, 21st, 24th, 25th.

Lower lake region.—4th, 19th, 20th, 25th.

Upper lake region.—5th, 15th to 19th, 21st to 25th, 29th.

Extreme northwest.—2d, 19th to 23d, 25th.

Upper Mississippi valley.—1st, 5th, 7th, 14th, 15th, 18th, 24th, 31st.

Missouri valley.—16th, 19th to 25th.

Northern slope.—2d, 18th, 19th, 22d to 25th.

Middle slope.—2d, 4th, 16th, 18th to 21st, 23d, 30th.

Southern slope.—18th, 23d.

Southern plateau.—5th, 17th, 18th, 24th, 29th, 30th, 31st.

Middle plateau.—1st, 2d, 4th, 22d, 31st.

Northern plateau.—2d, 18th, 19th, 22d, 23d, 27th, 28th, 29th.

Lunar halos were also reported from the following stations, not included in the districts named above:

San Francisco, California, 2d, 15th, 16th, 17th, 20th, 21st, 23d, 25th, 26th; Los Angeles, California, 27th; Visalia, California, 16th, 22d; Roseburg, Oregon, 19th, 21st, 26th; Eagle Pass, Texas, 18th.

MIRAGE.

Creswell, Kansas, 7th.

Pretty Prairie, Kansas, 4th, 17th, 23d, 28th.

Genoa, Nebraska, 1st, 17th, 18th, 26th, 27th.

Indianola, Texas, 1st, 2d, 3d, 16th, 17th, 27th.

MISCELLANEOUS PHENOMENA.

SUNSETS.

The characteristics of the sky, as indicative of fair or foul weather for the twenty-four hours succeeding each observation taken at sunset, have been observed at all Signal Service stations. Reports from one hundred and seventy-nine stations show 5,469 observations to have been made, of which twenty-seven were reported doubtful; of the remainder, 5,442, there were 4,626, or 85.0 per cent., followed by the expected weather.

SUN SPOTS.

The following records of sun spots for the months of November and December, 1882, have been forwarded by Mr. D. P. Todd, Director of the Lawrence Observatory, Amherst, Massachusetts. The record for November was not received in time for publication in the REVIEW for that month:

DATE— Nov., 1882.	No. of new		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. of		REMARKS.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 8 a. m.	0	10	0	0	0	0	5	35†	One spot very large. Do. Do.
2, 12 m.	0	0	0	0	0	0	5	35†	
3, 8 a. m.	1	8	0	3	1	3	6	35†	
4, 2 p. m.	0	0	1	10	0	0	5	25†	Three spots quite large.
5, 8 a. m.	0	5	2	10	0	5	3	20†	
6, 10 a. m.	0	0	0	0	0	0	3	20†	
7, 2 p. m.	2	15	1	5	1	5	4	30†	
8, 10 a. m.	0	0	1	5	0	0	3	25†	
10, 2 p. m.	1	1	0	0	0	0	4	25†	
12, 12 m.	1	3	0	0	1	3	5	30†	
19, 7 a. m.	0	0	0	5	0	0	6	40†	
23, 7 p. m.	0	0	0	5	0	0	6	35†	
24, 6 p. m.	0	0	1	5	0	0	4	30†	
26, 3 p. m.	0	0	1	5	0	0	3	25†	
27, 3 p. m.	1	10†	0	0	0	0	4	35†	
28, 4 p. m.	0	0	0	0	0	0	4	35†	
29, 4 p. m.	0	0	0	0	0	0	4	35†	

† Approximated. Faculae were seen at the time of every observation. The record of November 19, 27, and 29 is taken from photographs of the sun, 4.5 inches in diameter, made with the horizontal photoheliograph of the Lick Observatory, Mount Hamilton, California.

DATE— Dec., 1882.	No. of new		Disappeared by solar rotation.		Reappeared by solar rotation.		Total No. visible.		REMARKS.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 6 p. m.	0	0	0	0	0	0	2	10†	Spots mostly small. Do. Do.
2, 7 p. m.	0	0	0	0	0	0	2	10	
3, 6 p. m.	0	0	2	10	0	0	0	0	
4, 3 p. m.	1	5	0	0	0	0	1	5	
6, 4 p. m.	1	1	0	0	0	0	2	6	
6, 12 m.	1	2	0	0	0	0	3	8	
7, 6 p. m.	0	0	0	0	0	0	3	8	
8, 6 p. m.	0	0	0	0	0	0	3	8	
9, 5 p. m.	0	4	0	0	0	0	3	15	
12, 1 p. m.	1	10	0	0	1	10	3	20†	
14, 7 p. m.	0	0	1	5	0	0	2	15†	Many of the spots small. Do.
15, 5 p. m.	0	0	0	0	0	0	1	10†	
16, 3 p. m.	1	10	0	0	0	0	2	30†	
20, 6 p. m.	0	0	0	0	0	0	2	15†	

† Approximated. Faculae were seen at the time of every observation. The record of spots for December 1, 2, 3, and 6 is taken from photographs of the sun, 4.5 inches in diameter, made with the horizontal photoheliograph of the Lick Observatory, Mount Hamilton, California.

The following record of observations has been forwarded by Mr. A. S. Bender, of Sacramento, California:

DATE— Dec., 1882.	No. of new		Disappeared by rotation.		Reappeared by rotation.		Total No. of		REMARKS.
	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	Gr'ps	Spots	
1, 10.30 a. m.			2	20*			2	15*	Other groups disappeared, not by rotation, atmosphere thick, spots dim.
2, 11.30 a. m.							2	15	Atmosphere thick, spots dim.
3, 11.15 a. m.									Sun seems clear of spots but atmosphere thick, spots dim.
4, 11.30 a. m.									Do.
5, 11.15 a. m.									Do.
6, 12.15 a. m.									Sun seems clear of spots but atmosphere thick, spots dim. After transit was over could see no spots but the atmosphere was very moist and probably spots existed both on this and former days.
10, 10.35 a. m.					1	3	1	3	Atmosphere still very moist, one spot quite large.
12, 10.50 a. m.	1	2					2	5	Atmosphere still very moist, possibly some spots invisible.
14, 3.00 p. m.							2	15*	Atmosphere clearer, some spots very dim.
23, 10.00 a. m.							2	8*	Some spots very dim.
26, 9.30 a. m.							1	1	Not quite clear, there may be other spots.
26, 12.30 p. m.					2	2	2	2	One spot disappeared, not by rotation, one quite large.
27, 1.10 p. m.							2	2	
28, 11.40 a. m.							2	2	
29, 11.00 a. m.							2	2	
30, 12.10 p. m.	1	8*			1	1	3	10*	One disappeared, not by rotation.

* Estimated.

Mr. H. D. Govey, at North Lewisburg, Ohio, reports: Sun spots were observed on all clear days during the month. They were least numerous on the 3d, most numerous on the 18th, and largest on the 30th.

METEORS.

Huron, Dakota, 5th.—A very brilliant meteor was observed at 10.35 p. m., passing downward from a point about 40° above southern horizon, and bursting, when at an altitude of 10°, into fine pieces resembling balls of fire. The meteor illuminated the surrounding country for several seconds, and left a trail which remained visible for ten seconds.

Yuma, Arizona, 10th, 11th, 13th, 16th, 19th, 20th, 31st.

Princeton, California, 3d.

Visalia, California, 2d, 20th, 28th.

Alexandria, Dakota, 31st.

Augusta, Georgia, 8th.

Vevay, Indiana, 11th, 13th, 24th.

Clinton, Iowa, 6th, 13th.

Davenport, Iowa, 1st, 2d.

Muscatine, Iowa, 4th.

Creswell, Kansas, 4th.

Fort Scott, Kansas, 2d, 9th, 17th.

Eastport, Maine, 31st.

Gardiner, Maine, 20th.

Portland, Maine, 20th.

Woodstock, Maryland, 6th.

Williamstown, Massachusetts, 12th.

Fall River, Massachusetts, 12th.

Alpena, Michigan, 7th.

Saint Vincent, Minnesota, 8th, 12th, 13th.

Freehold, New Jersey, 8th.

Kiantone, New York, 20th.

North Volney, New York, 11th.

Stateburg, South Carolina, 11th.

Knoxville, Tennessee, 5th.

Memphis, Tennessee, 11th.

Palestine, Texas, 2d, 10th.

Woodstock, Vermont, 20th.

Fort Myer, Virginia, 31st.

EARTHQUAKES.

Concord, New Hampshire, 19th.—One of the severest earthquake shocks ever experienced here, occurred at 5.24 p. m. There was a sound resembling that of a heavy explosion, causing buildings to shake, and frightening the inhabitants. The shock apparently travelled from east to west, as it was felt at Pittsfield, New Hampshire, about four minutes later than at this place. The shock was also felt at Great Falls, Manchester, and at other places in this state. The duration of the shock was about eight or ten seconds.

Dover, New Hampshire, 19th.—Two light, but very perceptible shocks of earthquake, lasting two seconds, were experienced here at about 5.15 p. m., today, causing great alarm. The shocks were accompanied by a rumbling noise, and are reported to have been felt at Rollinsford, Rochester, and other neighboring towns.

Contoocook, New Hampshire, 19th.—The heaviest earthquake shock experienced here during the last ten years, occurred at 5.20 p. m. of this date. The shock lasted several seconds.

New Market, New Hampshire, 19th.—An earthquake shock was felt here at 5.25 p. m. There was but one shock, lasting about ten seconds, and was the heaviest ever felt here. The vibration was from the north. A slight shock was also felt between midnight of the 24th and 1.00 a. m. of the 25th.

Visalia, California, 19th.—Two light shocks of earthquake were felt here at 11.45 p. m.; they were quite distinct, with an interval of about one minute between them. The vibration was from east to west.

Eastport, Maine, 31st.—A very perceptible shock of earthquake was felt at this city at 9.55 p. m. of this date.

Ashwood, Tennessee, 31st.—At about 7.00 p. m., a distinct shock of earthquake was felt here. The shock was of about three seconds duration, causing windows, etc., to rattle.

Bangor, Maine, 31st.—Slight shock of earthquake felt in this city at 9.30 p. m.

SAND-STORMS.

Yuma, Arizona, 18th.
Fort Garland, Colorado, 12th, 30th.
El Paso, Texas, 19th.

POLAR BANDS.

Riley, Illinois, 16th.
Gardiner, Maine, 21st.
Portland, Maine, 6th.
Protem, Missouri, 28th, 29th.
Clear Creek, Nebraska, 1st, 4th, 16th, 18th.
Freehold, New Jersey, 6th, 7th, 25th.
Vineland, New Jersey, 6th, 23d, 30th.
Nashville, Tennessee, 2d, 12th, 13th, 14th, 25th.
Fort Myer, Virginia, 6th, 19th.
Wytheville, Virginia, 2d, 5th, 6th, 8th, 9th, 14th, 19th, 25th, 27th.

ZODIACAL LIGHT.

Punta Rassa, Florida, 1st to 5th, 8th, 9th, 11th, 26th, 30th.
Cambridge Massachusetts.—Visible 3d, 4th, 8th, 12th, 28th, 29th, 30th; suspected 9th.
Somerset, Massachusetts, 2d, 12th, 28th, 29th, 30th.
Clear Creek, Nebraska, 26th, 27th, 28th.
Albany, Oregon, 30th, 31st.
Nashville, Tennessee, 5th to 8th, 10th to 13th, 30th.
Palestine, Texas, 1st, 3d, 10th, 11th, 13th, 14th, 16th, 20th, 29th.
Wytheville, Virginia, 31st.

PRAIRIE AND FOREST FIRES.

Fort Smith, Arkansas, 8th.
Yankton, Dakota, 4th.
Fort Supply, Indian Territory, 1st, 19th.
Fort Sill, Indian Territory, 1st, 2d, 12th.
Fort Concho, Texas, 8th, 11th, 20th.
Fort McKavett, Texas, 11th, 20th, 26th, 27th.
Creswell, Kansas, 2d, 3d, 9th, 11th, 12th.
Yates Centre, Kansas, 4th, 10th to 17th.
Poway, California, fire in mountains 16th.

DROUGHT.

Woodstock, Vermont, 31st.—Many wells are dry and in some places, farmers are compelled to melt snow for their stock.
Charlotte, Vermont.—The month closes with great scarcity of water in wells and springs; snow is melted for domestic purposes, and cattle are driven long distances for water.

MIGRATION OF BIRDS.

Geese flying southward.—Point Judith, Rhode Island, 11th; Narragansett Pier, Rhode Island, 11th, 14th; Augusta, Georgia, 30th; Hatteras, North Carolina, 26th; Denison, Texas, 12th; Coleman City, Texas, 14th; Lewiston, Idaho, 5th, 24th; Somerset, Massachusetts, 2d, 6th, 12th, 20th. *Flying south-westward.*—Block Island, Rhode Island, 12th, 14th. *Flying south-eastward.*—Indianola, Texas, 17th.

Ducks flying northward.—Charleston, Illinois, 3d. *Flying westward.*—Creswell, Kansas, 20th. *Flying southward.*—Protem, Missouri, 1st; Coleman City, Texas, 22d, 27th.

NOTES AND EXTRACTS.

The following extract is taken from an article by Professor Dr. H. Wild, Director of the Physical-Central Observatory, at Saint Petersburg, Russia:

The cold of October, 1880, at Saint Petersburg: * * * * *
The mean temperature of October, 1880, at Saint Petersburg was only 31° F. (—0° F. Cent.), while the October normal, as deduced from observations covering a period of 125 years, is 40° F. (4° F. Cent.) Throughout the whole series of those years, there are only two Octobers in which the mean temperature was below 32° F. (0° F. Cent.); viz.: In 1757, mean 31° F. (—0° F. Cent.), and 1811, mean 31° F. (—0° F. Cent.). The month of October, 1880, was therefore the coldest experienced in 121 years. The daily mean for the 15th is even more remarkable than that for the entire month. On the 15th, the mean temperature for the day was below 32° F. (0° F. Cent.); on the 18th and 19th, the temperature was a little above freezing, and from the 19th to the close of the month, it remained about 5° below zero (23° F. Cent.).

In the 118 years for which we have complete observations for the individual days, there are only six years in which, as in October, 1880, a series of twelve consecutive days of hard frost are recorded. They are: 1757. From October 13th to 29th, when the mean remained below 32° F. (0° F. Cent.). 1805. From October 17th to 31st, mean below 32° F. (0° F. Cent.); (mean of the month 33° F. Cent., or 0° F. Cent.).

1811. October 12th and 13th, and from the 17th to 31st; continual frost.
1827. From October 20th to 31st; mean below 32° F. (0° F. Cent.).
1852. From October 18th to 31st; continual frost, monthly mean 34° F. (1° F. Cent.).
1875. From October 18th to 29th; the temperature remained below freezing.
The last half of October, 1880, was not only very cold, but, during that period, much snow fell on twelve days.

On October 17th, the river Neva was covered with thick ice. The record relative to the opening and closing of the Neva, dates back to 1706; during this period of 174 years, the river has been covered with ice in October, only three times; viz.: October 29, 1805; October 31, 1811, and October 30, 1852.

Taking into consideration the twelve consecutive frost-days, the large amount of snowfall, and the closing of the Neva, we find that, at the most, only the years 1805 and 1811 can be compared with 1880, as regards an early winter.

While we cannot account for this abnormal condition during former years, owing to the incompleteness of the observations, we can, to some extent, do so for the year 1880. From the last synoptic charts of the Physical-Central Observatory, it is seen, that, in the second half of October, many cyclonic disturbances passed Saint Petersburg. The centres of these disturbances, deviating from the normal course during this season, did not pass northwest, but southwest, of Saint Petersburg. Saint Petersburg was, therefore, not on the warm south side, but was on the cold north side, of these disturbances, which were laden with moisture from the ocean.

Why these storms pursued such an abnormal course, we cannot yet determine, any more than we could 100 years ago. The science of meteorology has been too much neglected to expect a speedy solution of such difficult problems.

The following is taken from the Annual Report of Dr. H. B. Baker, Secretary of the Michigan State Board of Health, 1878:

Meteorological conditions are known to have great influence on the health of the people; and certain groups of such conditions are known to be coincident with, and are believed to cause, directly or indirectly, a very great many deaths during each year; such, for instance, as a large proportion of the deaths from diseases of the bowels in summer; and of deaths from croup, bronchitis, inflammation of the lungs, etc., in winter. Any study of the causes of disease with a view to their prevention, must, therefore, include comparisons of their rates with statements of the meteorological conditions existing at the same time, or immediately preceding. Such comparisons can be made by years, by seasons, and by months, and will be facilitated by noting those years, seasons, or months, which are exceptional in any of the meteorological conditions observed, and ascertaining whether there were any exceptional facts concerning any disease which appear to correspond therewith; and if so, whether comparisons for a series of years, seasons, or months, show such correspondence to be constant. Conversely, exceptional times of disease supply peculiarly favorable opportunities for studying meteorological conditions which may influence the disease. In considering the question to what extent they are only incidental, all other conditions which can have influence in causing or modifying the disease must be kept in mind, or be separately considered. In order to eliminate the evidences of unknown or unconsidered influences, and of those which are only indirect or incidental, comparison must be made by different periods of time; as, for instance, if a given disease is found to prevail most in years when certain meteorological conditions prevail, it is needful to learn whether it also prevails most in months when the same meteorological conditions prevail; because the disease might be caused by something coincident with such conditions, and which only occur once in a year, and can, therefore, be coincident only by years. Conversely, it is useful to compare by years where a disease has been found coincident with certain meteorological conditions by months. Because of the interdependence of the several meteorological conditions it is usually the fact that when certain meteorological conditions are found to bear a more or less constant relation to a given disease, certain other meteorological conditions are found also to have nearly or quite as constant a relation, so that the cause of the disease is not certainly reached by means of this knowledge alone. Technical knowledge is requisite to appreciate the bearing of the evidence. There is much, however, that may be done in advancing this study by the meteorologist or physicist alone; because it not unfrequently happens that the usual harmony in the meteorological conditions is not maintained, some one or more being exceptionally prominent or absent as the case may be.

The following is taken from the Journal of the Franklin Institute, vol. cxiv., No. 682:

REVERSALS OF TEMPERATURE.

M. Alluard records several comparative observations in January and February, 1882, at the summit of Puy de Dome and at Clermont, which show that whenever an area of high-pressure covers central Europe, and especially France, it is attended by an inversion of temperature with increase of altitude. Arago observed such an inversion in 1839, and the phenomenon has

often been noticed subsequently. The visibility of Mont Blanc from the Puy de Dome furnishes a means of studying the distribution of densities in the lower layers of the atmosphere, especially at the epochs of the phenomenon in question. Faye proposes to institute observations upon geodesic refraction, between the summits of the Puy de Dome and certain points which are easily accessible upon Mont Blanc. The beautiful geodesic operations of the French War Department, under the direction of Col. Perier in connection with Spanish officers, show that it would be possible to institute reciprocal and simultaneous measurements of zenith distance between luminous signals upon the two mountains.—*Comptes Rendus*, xciv., 1175.

ERRATA.

The following corrections should be made in the REVIEW for November, 1882:

Page 4, International Meteorology, first paragraph, "Chart v. is prepared for November, 1880," should read, for December, 1880.

Page 5, "The accompanying table shows the deviations in pressure and temperature at isolated stations during August, 1880," should read, during September, 1880.

NOTE.

Co-operating observers who receive both the MONTHLY WEATHER REVIEW and the MONTHLY SUMMARY OF SIMULTANEOUS OBSERVATIONS will find chart iv., described in this REVIEW, in the SUMMARY for October, 1880.